

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number  
WO 2005/054073 A1

(51) International Patent Classification<sup>7</sup>: B65D 47/24, 47/26, 47/36, 41/50

(74) Agents: CUMMING, Hector, John et al.; Unit E, 483 Rosebank Road, Avondale, 1007 Auckland (NZ).

(21) International Application Number: PCT/NZ2003/000264

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 1 December 2003 (01.12.2003)

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): MARINE AIR SYSTEMS (NZ) LTD [NZ/NZ]; 30-32 Downer St, 6009 LOWER HUTT (NZ).

(72) Inventors; and

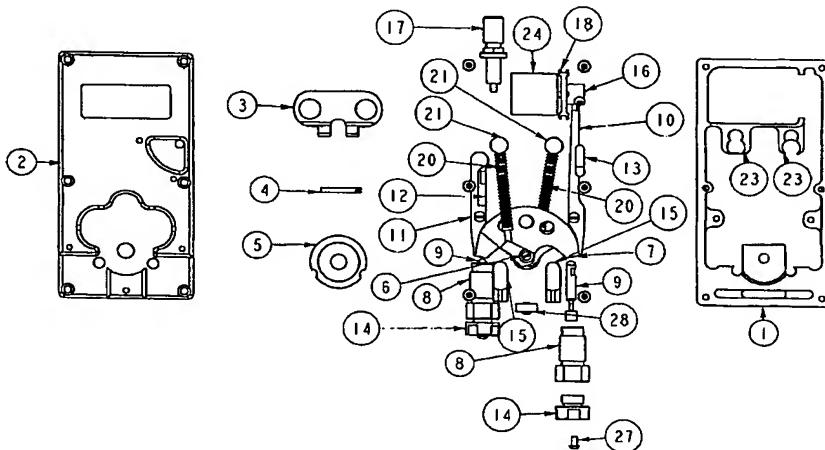
(75) Inventors/Applicants (for US only): BALLANTINE, Roger [NZ/NZ]; 30-32 Downer St, 6009 LOWER HUTT (NZ). HORNBROOK, Anthony, Paul [NZ/NZ]; 30-32 Downer St, 6009 LOWER HUTT (NZ). MOORE, Ian [NZ/NZ]; 30-32 Downer St, 6009 LOWER HUTT (NZ). HAMILTON, Dave, Norman [NZ/NZ]; Trentham Army Camp, Messines Road, Trentham, 6007 UPPER HUTT (NZ).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,

[Continued on next page]

(54) Title: SHOCK TUBE INITIATOR



(57) Abstract: A shock tube initiator (STI) for allowing the remote and/or manual initiation of at least one shock tube, typically two shock tubes is disclosed. The STI consists of: a) at least one coupling 8, connected to a shock tube containing a shot shell primer that upon firing initiates burning of the shock tube, b) a cockable mechanical firing mechanism 7 adjacent to the coupling 8 wherein the mechanical firing mechanism 7 is adapted to strike respective firing pins 9 within the couplings, c) a safety mechanism 15 adapted to allow the mechanical firing mechanism 7 to ignite said explosive charge only when the safety mechanism 15 is moved from a safe mode position to an armed position, d) a rotary solenoid valve 24, electrically connected to and energised by a remote controlled operating system, and e) an actuator 10 positioned between and engageable with the rotary electro-mechanical energising means 24 and the firing mechanism 7 and wherein said actuator 10 is adapted to be actuated either by the rotary solenoid valve 24, when energised, or manually manipulated (13) to allow the cockable mechanical firing mechanism 7 when cocked, to ignite said shell primer.



EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT,

LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

**Published:**

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.